

## **THE EFFECT OF E-STRATEGY ON THE ADOPTION OF ONLINE BANKING IN MALAYSIAN**

Shahmir Sivaraj Abdullah<sup>1</sup>  
Haim Hilman Abdullah<sup>2</sup>

### **Abstract**

*Online banking has predominantly been studied in relation to adoption and its relationships with trust or in combination with other technology adoption theories such as the technology adoption model (TAM). This study however looked at the influence of E-strategy on the adoption of online banking by consumers. Most studies on strategy have tended to look at this from the perspective of the organization itself but this study has done the exact opposite i.e. it has studied strategy from the consumer's point of view. E-strategy here is posited as the electronic strategy that is adopted by firms to increase the uptake of services offered by banks through the use of the internet from the consumer's home. To this end, a systematic random sampling of residents in and around various cities in Malaysia was used as the study's sample. A Pearson correlation followed by a multiple regression, and later a bootstrap of the regression output was used to test the hypotheses that were generated. The dimensions of e-strategy (customer perspective, internal processes, competitive strategy) were studied for their influence on adoption (Attitude, behavioural intention). The regression analysis indicated a significantly positive relationship between the individual dimensions of E-strategy and subsequently the E-strategy variable itself with adoption in the context of consumer online banking adoption. The study has provided useful insights on the dimensional attributes of E-strategy and its influence on the consumer. The study implied that E-strategy has a strong and significant impact on adoption and as such positively influences the intention to adopt online banking in Malaysia. Recommendations for future research are suggested at the end of the article.*

**Keywords:** *E-Strategy, Customer Perspective, Internal Processes, Competitive Strategy, Online Banking.*

2016 GBSE Journal

### **Introduction**

Malaysia has one of the highest internet penetration rates in the world (Mindshare, 2013). The high level of Internet penetration in Malaysia has not increased or induced higher online banking adoption as should be the case. This study was undertaken for this purpose and also to further enhance knowledge on the adoption of online banking in Malaysia. The study hopes to introduce E-strategy as a construct when studying adoption of online banking.

The Internet has created a paradigm shift in the way businesses operate. To neglect it is at these businesses own peril. Surprisingly, this seems to be the prevalent condition at present (Haag & Cummings, 2014). This new phenomenon (the Internet) is only possible because of

---

<sup>1</sup> Lecturer, Universiti Utara Malaysia

<sup>2</sup> Lecturer, Universiti Utara Malaysia

technology. Technology has evolved from merely being used in the manufacture of products to a more holistic presence such as in social media. This has happened primarily due to enhanced connectivity and this phenomenon when coupled with the speed with which people are connected has forever altered the way firms reach their customers. Some firms will even cease to exist without the Internet (i.e. Amazon and E-Bay).

Banks cannot be excluded or cushioned in any way from these pressures. There is even talk of creating cashless societies but these hopes cannot be achieved by sheer ignorance. There is an urgent need to learn and learn quickly to compete. Banks in this case cannot compete without understanding the customers and how their (banks) actions are influencing their customers without studying their perceptions, likes and dislikes.

Through a study in 2010 conducted by comScore Inc. they found that customer satisfaction is predominantly driving online banking within the US. They were referring to the enhanced campaigns such as the “e-savings” campaign by Citibank. Another banking institution (Washington Mutual) has even gone so far as to provide free checking and 5% statement savings for their account holders (comScore, 2010). In a later study conducted as a follow up to this earlier article it was found that customer experience during the process of internet banking, customer satisfaction during account opening and the prevalent security were important elements that drive online or internet banking adoption (comScore, 2010). This is where the appropriate strategy will create trust between the customer and the bank.

The above has been further enhanced by the findings published by Mindshare in 2013 which states that ‘Malaysians lag behind in being motivated by transactional use of the Internet, and that even though Malaysia sits near the middle of the global league table with relatively high scores for entertainment and self-expression use of the Internet, it is weighed down by a very low score for transactional usage (the use of the internet for purchases). It opines that Malaysians primarily use the internet for seeking online information as opposed to actual online purchase or in other words online transactional use (Mindshare, 2013).

The usual assumptions that can be drawn is usually related to delivery and adoption of online banking by the consumer and the reasons why this phenomenon (in Malaysia) is taking place at a time when the adoption (online banking) rates worldwide is rising. This may be because of the choice of ICT (information communications technology) tools by Malaysian organizations lacks effectiveness or are poorly aligned to organisational goals thereby rendering them ineffective. A further point here is that the increasing rate of Internet shopping seems to centre on the purchase of airline tickets which also begs research (MCMC, 2005).

According to Hong, Vinayan, Soh, Khan, and Ong (2013) the volume of online banking subscribers is still low in Malaysia at only 4.1% or 1.23 million. This is however almost 50% lower than the estimate by Times (2011) which had put the figure at 2.7 million. The Times (2011) estimate was picked up by AFP (Agence France-Presse) which quoted them as saying that there has been an upsurge in online banking in South East Asia especially in Malaysia with 2.7 million users on March 9, 2011. However, both these figures are still a small proportion of Internet users in Malaysia, estimated to be 67% of the total population or 19.9 million subscribers (Borneo Post Online, 2014). This in a situation where there are 31 banks offering online banking facilities in Malaysia (see Table 1). This list is provided by Bank Negara Malaysia which regulates such services in Malaysia.

Many technology-centred products and services fail to reach their expected purpose, and some are just abandoned (Burton-Jones & Hubona, 2006). This may be due to the inability of firms to transmit their actions effectively especially within an environment that does not allow for personal interaction. Banks just like all other businesses must learn to appreciate the fact that online banking (in the case of banks) is a part of E-business (in the case of other

businesses) and by itself is merely the operationalization of the E-strategy identified by the firm to widen its reach. You cannot adopt an E-business strategy without first identifying the environmental factors that are shaping the business environment (this must happen at the strategic level of the organization), from this a deliberate decision to expand electronically (electronic strategy) which may be through E-commerce or the more expansive E-business model may be adopted. As stressed above, this strategy needs to be addressed at the highest levels of the firm to negate any resultant technology adoption failure.

Table 1  
*Banks Offering Online Banking in Malaysia*

No.	Name of Bank
1.	Affin Bank Berhad
2.	Agrobank
3.	Al Rajhi Banking & Investment Corporation (Malaysia) Berhad
4.	Alliance Bank Malaysia Berhad
5.	AmBank (M) Berhad
6.	Bank Islam Malaysia Berhad
7.	Bank Kerjasama Rakyat Malaysia
8.	Bank Muamalat Malaysia Berhad
9.	Bank of America Malaysia Berhad
10.	Bank of Tokyo-Mitsubishi UFJ (Malaysia) Bhd
11.	Bank Simpanan Nasional
12.	BNP Paribas Malaysia Berhad
13.	CIMB Bank Berhad
14.	Citibank Berhad
15.	Deutsche Bank (Malaysia) Berhad
16.	Hong Leong Bank Berhad
17.	Hong Leong Bank Berhad
18.	HSBC Amanah Malaysia Berhad
19.	HSBC Bank Malaysia Berhad
20.	Industrial and Commercial Bank of China (Malaysia) Berhad
21.	J.P. Morgan Chase Bank Berhad
22.	Kuwait Finance House (M) Berhad
23.	Malayan Banking Berhad
24.	OCBC Bank (Malaysia) Berhad
25.	Public Bank Berhad
26.	RHB Bank Berhad
27.	RHB Islamic Bank Berhad
28.	Standard Chartered Bank Malaysia Berhad
29.	Sumitomo Mitsui Banking Corporation Malaysia Berhad
30.	The Royal Bank of Scotland Berhad
31.	United Overseas Bank (Malaysia) Berhad

Source: [http://www.bnm.gov.my/?ch=ps&pg=ps\\_regulatees](http://www.bnm.gov.my/?ch=ps&pg=ps_regulatees)

Businesses cannot operate independent of the environment and understanding this factor inherently means understanding the consumer. As is the case in an online environment there is no face to face interaction between the customer and the service provider. By this we mean that there is no ‘over the counter’ interaction as opposed to a first time over the Internet

interaction. This study however, intends to examine over the Internet utilization of online banking services by existing customers and what they perceive as influencing their intention. This study looked at online banking services which included actions to check basic customer account information and balances, utilising it for paying bills, requesting and viewing recent transactions, viewing their statements, engaging in money transfers, directing the bank to set up and cancel standing orders or direct debits with the requisite being that all these be conducted from home (Suki, 2010; Amin, 2007; Aladwani, 2001).

## Literature Review and Model Development

Banks use strategy to influence customers and if the strategy is misapplied it may well lead to a lack of utilisation by its customers. The level of adoption by consumers is hypothesized to ascertain the level of effectiveness of the strategy that is employed by banks. This measure is an acceptable test of effectiveness of firm performance (Öztürk & Coskun, 2014; Ortega, 2010; Parnell, 2010).

The main reason firms adopt new technologies is to enhance their ability in the following areas:

- a. To enhance efficiency by reducing costs associated with effective supply chain management (Kroenke, 2014).
- b. To enhance competitive advantage through the provision of new products and services (Kronke, 2014).
- c. To enhance the provision of improved services to its customers (Igbaria & Tan, 2007; Legris, Ingham & Collette, 2003; Lucas & Spittler, 1999; Fichman & Kemerer, 1997).

However, IT adoption failure is by no means uncommon within firms (Robert and Racine, 2001) especially due to unplanned and slipshod adoption. This usually happens at the implementation phase (Tan & Sutherland, 2004; Legris et. al., 2003; Umble, J., Haft & Umble, M., 2003; Rogers, 1995; Sauer, Southon, & Dampney, 1997; Szajna & Scamell, 1993) and ranges from underutilization to outright rejection (Venkatesh and Davis, 2000). If the intended audience is not clearly identified then the expected outcomes will tend to be negative.

Many studies have identified a plethora of situations which contribute to both success and failure as a result of IT adoption and implementation (Kroenke, 2014; Laudon, K.P. & Laudon, J.C., 2014; Haag & Cummings, 2014; Turban & King, 2012; Johnston & Linton, 2000). These failures are often centred on two elements both interconnected to each other i.e. the individual consumer and the firm. The reasons for technology adoption and the factors that influence its adoption needs to be addressed from an organizational and more importantly consumer perspective. There are arguments to say that the success of such initiatives is totally dependent upon the customer but this can only be achieved by influencing the customer to adopt such an initiative by a coherent and well thought out strategy. When a CEO intends to change the direction of his company and influence its eventual outlook, he or she must proactively not only decide what products, consumers, and markets the company wishes to pursue (Robert and Racine, 2001) but what actions need to occur and how the mission of the firm will be achieved.

The independent variable that is used as the premise in this study is E-strategy because it is hypothesized that E-strategy affects the intention of utilizing online banking. Banks use strategy to influence customers and if the strategy is misapplied it may well lead to a lack of utilization by its customers. The level of adoption by consumers is hypothesized to ascertain

the level of effectiveness of the strategy that is employed by banks. This measure is an acceptable test of effectiveness of firm performance (Öztürk & Coskun, 2014; Ortega, 2010; Parnell, 2010).

### **Customer Perspective, Internal Processes and Competitive Strategy**

In the balanced scorecard (BSC) as proposed by Kaplan and Norton (2001, 1996), they stress that managers must identify their customers as well as market segments in which their businesses intend to compete and the measures that can be used to ascertain the effectiveness of their businesses performance. Compared to the traditional performance measurement tools that focused on financial metrics alone, the BSC focuses on three additional performance metrics (customer, internal process, and learning and growth) to provide a holistic performance outlook (Kaplan, 2010; Kaplan & Norton, 1996). The underlining premise of the BSC is that “if you cannot measure it, you cannot understand it” (Kaplan, 2010). This is definitely true in the case of the adoption of online banking. If you don’t understand what your customer wants then it will be difficult to entice him or her.

This study has included two of the four measurement metrics namely customer perspective and internal process because these are supportive of one another. This is in appreciation of the fact that the customers perception of the firm is paramount because customers provide the firm’s direct revenues through the sales of its product or service, and more importantly their perception of the organisation that they are interacting with is critical to the effectiveness of the firm’s objectives (Casey & Peck, 2004).

This is because the value of any firm’s strategy is only as good as the utilization of it by its customer which can only be ascertained by the view, in this case the perspective of the customer. To achieve this, the internal processes of the firm must be geared to ensuring that the customer perspective remains positive towards the firm or in other words the technology must meet its intended purpose (Lim, Stratopoulos & Wirjanto, 2012; Kalkan, Erdil & Cetinkaya, 2011; Venkatraman, Henderson & Oldach, 1993). The customer perspective they contend tends to include several generic or commonly used measures. These in turn will indicate the success of well-formulated and implemented strategies (Kaplan, 2010; Kaplan & Norton, 2001). To be able to fathom customer perspective of the firm, the firm needs to measure time, quality of the product or service, the firm’s performance, and the cost savings that can be expected (Kaplan and Norton, 1996).

This is where the value of the product or service to the customer is important because any disconnect between consumer value and the chosen strategy of the firm may present issues to the success of any initiative (Svee, Giannoulis and Zdravkovic, 2011). A bank in this case may be providing a very good e-banking system but from a consumers perspective it may be both unappealing and in certain cases unusable. The system in place may satisfy the firm’s needs but it has failed to do the same for its customers. This will obviously hinder adoption. Unfortunately, current approaches to business strategy do not explicitly capture the values regarding products and services that come directly from consumers (Svee et. al., 2011). This is where the study intends to shed light on, meaning identifying the perspective of the customer so as to be able to see if the systems in place are doing their job in facilitating customer patronage (Wu and Olk, 2014).

The above is closely linked to customer value, which includes the experiences gained through the consumption of product or service. These experiences co-exist between esteem as experienced and status (Holbrook, 1999). These studies were seminal in their analysis of

customer value but never the less it is important to note that customer perspective inextricably includes the value that is associated with action on the part of the consumer.

It is therefore a prerequisite that we have included both these elements (social value) in the instrument which measured the influence of loyalty rewards on the consumer (Sánchez-Fernández, Angeles & Holbrook, 2009; Gallarza and Saura, 2006; Bourdeau, Chebat, and Couturier, 2002). Social value here implies that the individual consumers' behaviour has the tendency to influence the response of others (Holbrook, 2006). There is a view that communal values like ethics and spirituality may be combined as an altruistic value because they are present outside the sphere of normal marketplace actions (Sánchez-Fernández et al., 2009). The cost side of value (price, risk, time and effort) must be included as inputs when measuring consumer value (Gallarza and Saura, 2006; Oliver, 1997).

The BSC also measures internal process to focus on the activities that enhance customer satisfaction, and innovation and learning to improve the skills of employees and to achieve superior internal business process (Bose and Thomas, 2007). Technology does influence a firms competitive strategy (Ortega, 2010; Slater, Olson & Hult, 2006; Garrigós-Simón & Marqués, 2004). Competitive strategies that are adopted by firms must be capable of not only enabling the process within the firm but also be capable of meeting strategic objectives (Ozturk & Coskun, 2014).

As the customer perspective and internal processes are important drivers of adoption in banks so is the differentiation concept in competition. This is evident because the traditional concepts of selling and buying have changed forever because of technology and its derivative the Internet. The banking system is no different and as such it needs to adapt quickly. Faced with this predicament this system is driven by the need to identify new and more innovative ways to influence its customers to do their banking over the Internet (Ezzi, 2014; Gerrard & Cunningham, 2003) and as a business to become more efficient (Ezzi, 2014) and effective (Baltzan and Phillips, 2014). A system must be user-friendly because there is nothing to be gained by confusing the customer (Shih, 2004). This is conventional wisdom but nevertheless have been set as pre-requisites for systems success (Haag & Cummings, 201; Laudon, K.C., & Laudon, J.P., 2012; Turban & King, 2012).

Internet banking through the use of ICT falls into the sphere of E-strategy proposed by (Cunningham, 2002; Hamel, 2002; Robert & Racine, 2001). To further expand to this and reinforce the role of e-strategy it is pertinent to take into account the conclusion by Slater et. al. (2006), where they found that strategy moderates the capability-performance of the firm. This is supported by Leidner, Lo & Preston (2011) when they concluded that information systems (IS's) strategy does impact firm performance in a profound way and that this needs to be investigated. It also influences the capability of the firm to achieve competitive advantage (Lim, Stratopoulos & Wirjanto, 2012). The situation still applies today, as is drawn on the statement by Adapa (2011), who opined that Internet banking has been much researched but it has not been applied in the business context when she studied online banking in Australia. This is something that must be investigated and the best way to do it is through the views of the customer.

### **Adoption of Online Banking**

The behavioural intention of an individual is dependent on their attitude (Fishbein and Ajzen, 1975). Intention or behavioural intention (BI) is a learning process (or the evolving nature of human intelligence) gained through daily experiences. More specifically intention is

the function sum total of attitudes related to a specific behaviour in combination with the associated subjective norms and it's how this a is a function of attitudes toward behaviour together with subjective norms and its regulative effect on a particular behaviour, which has been proven and accepted to significantly predict the actual exhibited behaviour (Miller, 2005).

Miller (2005) supports the finding by Sheppard, Hartwick and Barki (1988) when conducting a hierarchical analysis of various studies to test the different relationships, specifically linking behavioural intention (BI) to the behaviour relationship. They concluded that based on (87 studies conducted on published literature at the time) a frequency-weighted average correlation was identified which indicated 0.53 (strong) correlation between intention and behaviour. Attitude at best is only a partial mediator when seeking to identify the relationship between PEOU and PU (referred to as the formative beliefs) and technology adoption or intention (Venkatesh & Davis, 1996; Venkatesh & Davis, 2000; Venkatesh et al. 2003). Various studies have confirmed that behavioural intention (BI) significantly affects actual usage (Venkatesh, Morris, Davis, G.B., Davis, F.D., 2002; Davis, Bagozzi, Warshaw, 1989; Sheppard et. al., 1988).

The literature presented led to the development of the model below.

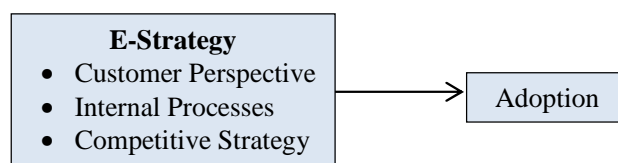


Fig. 1. Conceptual Framework

The hypotheses that were developed for the study are: H1: Customer perspective exerts a significant influence on the adoption of online banking; H2: internal processes exerts a significant influence on the adoption of online banking; H3: competitive strategy exerts a significant influence on the adoption of online banking; and H4: E-strategy exerts a significant influence on the adoption of online banking.

## Methodology

The study is based on a sample drawn from various townships/cities in Peninsular Malaysia. The townships covered were Changlun, Jitra, Sungei Petani in Kedah, Kangar in Perlis, Kuala Lumpur in Wilayah Persekutuan, Shah Alam and Seri Kembangan in Selangor and Batu Gajah in Perak. The data for this study was collected using a systematic random sampling mode through flyer distribution in the aforementioned areas. The distribution was conducted over a two week period in January 2016 and in June 2016. Every tenth unit in the residential areas within the townships was targeted and a total of 200 questionnaires in January 2016 and a further 200 were distributed in June 2016 covering a total of 4000 units. A total of 63 (31.5% response) completed questionnaires were received in the first phase in March 2016 and a further 42 (21% response) in August 2016. The total response rates for the two phases were 105 (26.3% response). Of the total received questionnaires received (105) only 97 were deemed usable and subsequently used for data analysis. The SPSS 22 software package was used for data analysis.

The pre-data analysis conducted indicated that linearity and homoscedasticity are ensured and multicollinearity, collinearity and unacceptable multivariate outliers do not exist. Therefore, the data used in the study was deemed fit for further statistical analysis. The output from SPSS is shown in Table 2 below. From the output below it can be seen that the tolerance values for all three independent variables are above 0.10 thereby indicating that there is no multicollinearity influence among the variables.

Tolerance is an indicator of how much of the variability of the specified independent variable is not explained by the other independent variables in the model calculated as  $1-R^2$  for each variable (Pallant, 2010). The tolerance values are read together with the VIF (variance inflation factor) value. Based on the VIF values all the variables indicated a value of below 10 which is acceptable (Pallant, 2010). VIF's are the inverse of the tolerances ( $1/\text{tolerance}$ ). The eigenvalues on the other hand indicate high inter-correlation between the independent variables (values close to 0.00) suggesting that small changes in values in the intra-values will have large changes in the coefficients (Pallant, 2010). This usually means that the variables complement each other effectively.

Table 2. Collinearity Diagnostics

Model	Collinearity Statistics		Model	Eigenvalue	Condition Index	Variance Proportions			
	Tolerance	VIF				(Constant)	SE	PRIV	REL
1 (Constant)			1 1	3.898	1.000	.00	.00	.00	.00
CP	.927	1.079	2	.064	7.820	.00	.14	.62	.01
IP	.919	1.089	3	.030	11.389	.00	.27	.11	.73
CS	.991	1.009	4	.005	21.278	1.0	.58	.37	.26

a. Dependent Variable: PU

a. Dependent Variable: PU

To determine which of the cases were outliers a Mahalanobis test was conducted as part of the regression test. To identify which cases are outliers, a determination of the critical chi-square value using the number of IV's as the degrees of freedom are used (Tabachnick & Fidell, 2007). For the three IV's a critical value of 16.27 is suggested (Tabachnick & Fidell, 2007). The output of Mahalanobis distances indicated a score of 0.088 which is well below the accepted level. The value for Cooks distance also falls within the acceptable distance of less than 1 at 0.000. A value of above 1 would require that the case be removed from the data analysis (Tabachnick & Fidell, 2007).

### Validity and Reliability

Next a validity and reliability test was carried out. Based on the results (see Table 3 below) no construct value for reliability was below 0.70 and as such all the constructs can be used in the study (Pallant, 2010; Sekaran, 2002).

Table 3. Construct Reliability Value

	Construct	Reliability	Specification
PU	Customer Perspective	0.854	Acceptable
	Internal Processes	0.915	Acceptable
	Competitive Strategy	0.793	Acceptable
TRUST	Attitude	0.870	Acceptable
	Behavioural Intention	0.887	Acceptable



## Summary of Descriptive Statistics

A total of 97 respondents were drawn from the cities/townships of Changlun (17); Jitra (12); Sungei Petani (14) in Kedah, Kuala Lumpur (15), Shah Alam (15); Seri Kembangan (11) in Selangor, Batu Gajah (6) in Perak and Kangar (7) in Perlis. Respondents were asked to indicate the strategic factors that most influenced their adoption of online banking. The majority of respondents were female (56.7%) whilst males comprised 43.3%. A full representation of the demographic factors from the sample is shown in Table 4 below.

Table 4. Demographic Factors

		Frequency	Percent			Frequency	Percent
Gender	Male	37	38.9	Age	18-35 years	40	41.2
	Female	60	61.9		36-45 years	36	37.1
					46-55 years	15	15.5
					> 56 years	6	6.2
Edu	MCE/SPM and below	10	10.3				
	HSC/STPM	25	25.8	Internet Access	<1 year	2	2.1
	Degree	48	49.5		>1-3 years	15	15.5
	Master/PhD	14	14.4		>3-5 years	20	20.6
					>5 years	60	61.9
City	Changlun	17	17.5	Online Banking	Yes	21	21.6
	Kuala Lumpur	15	15.5		No	76	78.4
	Shah Alam	15	15.5				
	Jitra	12	12.4				
	Sungei Petani	14	14.4				
	Kangar	7	7.2				
	Batu Gajah	6	6.2				
	Seri Kembangan	11	11.3				
Source: Author							

The more important aspects of the demographics are the adoption rate of online banking. Online banking comprised only 21.6% whereas non-users comprised 78.4% even though all the 97 respondents sampled had internet access. Another important element is that respondents' with tertiary education (62%) also seem to be rather reluctant to adopt online banking when compared with the overall adoption rates.

## Measurement of Variables

A questionnaire was used as the instrument of the study to capture relevant information related to the study. The variables were measured on a 5 point Likert scale ranging from strongly disagree = 1 to strongly agree = 5. In Part 1 of the respondents were also asked if they used online banking for any of their banking needs in addition to other demographical questions.

The items used to measure the dependent variable (adoption of online banking) are based on Tan, Potamites & Wens-Chi (2012); Mangin (2011); Hosein (2009); Amin (2007); Lai & Li (2005), whilst the independent variable of E-strategy trust and its dimensions of customer perspective, internal processes and competitive strategy is based on Wu & Olk (2014); Lim et. al. (2012); Kalkan et. al. (2011); Ortega (2010).

## Correlation and Regression Analysis

Table 5. Correlations between the E-Strategy Dimensions and Adoption of Online Banking

		ADO	CP	IP	CS	Mean	SD
Pearson Correlation	ADO	1.000	<b>.515</b>	<b>.591</b>	<b>.399</b>	3.913	0.644
	CP	<b>.515</b>	1.000	.270	.002	4.144	0.760
	IP	<b>.591</b>	.270	1.000	.093	3.689	0.979
	CS	<b>.399</b>	.002	.093	1.000	4.038	0.754
Source: Author		** Correlation is significant at the 0.01 level (2tailed)					

A statistical correlation analysis was done to evaluate the strength of relationship between the dimensions of security, privacy and reliability with the dependent variable of perceived usefulness. The analysis indicates (Table 5 above) internal processes ( $r = 0.515$ ), and customer perspective ( $r = 0.515$ ) have the highest correlation with adoption of online banking; whilst competitive strategy ( $r = 0.399$ ) has a lower correlation with adoption of online banking. The single linear relationship of E-strategy as a single variable with adoption of online banking returned a result of  $r = 0.390$  with a significance of  $p=0.000$  (when  $p<0.05$ ).

Table 5. Coefficients for the Multiple Regression Model

	Unstandardized Coefficients	Standardized Coefficients	t-value	Sig.
	B	Beta		
(Constant)	2.964		7.761	.000
CP	.332	.392	5.829	.000
IP	.298	<b>.453</b>	6.705	.000
CS	.304	.356	5.473	.000
a. Dependent Variable: PU				

The multiple regression analysis results from Table 5 above shows that all three dimensions of E-strategy (customer perspective, internal processes and competitive strategy) have a significant influence on adoption of online banking ( $\text{sig} = 0.000$ ,  $p < 0.05$ ). The result also indicates that internal processes has the strongest influence with the highest  $\text{beta} = 0.453$  and  $t$  score of 6.705. The adjusted  $R^2$  for this model is 0.598 indicating that 59.8% of the changes in the dependent variable are explained by the independent variables. The statistical significance (ANOVA) for this result indicates it is significant ( $F(3, 93) = 48.672$ , at  $p<0.005$  level).

## Discussion and Conclusion

The regression analysis in this study clearly supports H1, H2, H3 and H4. It reveals that customer perspective ( $p=0.00$ ); internal processes ( $p=0.000$ ) and competitive strategy ( $p=0.000$ ) have a significant influence on adoption of online banking. The study also shows that E-strategy as a single variable has a significant influence on the dependent variable ( $p=0.000$  at  $p<0.05$  level). Therefore, E-Strategy may have a strong moderating effect on online banking adoption because of its significant influence on its adoption. This conforms to

the results of several studies on strategy in general without the electronic component on the effect of strategy on performance (Wu & Olk, 2014; Lim et. al., 2012; Kalkan et. al., 2011).

E-strategy obviously plays an important role on online banking adoption but an in-depth look at its influence had offered a unique insight. Measuring its influence from an individual perspective is somewhat novel in this study. However, its influence cannot be disregarded or set aside. This may mean that the conventional models used to assess adoption of not only banking facilities but other Internet based delivered products would be better served to include it as a variable in view of the existing environmental issues. The dimensions of customer perspective, internal processes and competitive strategy as seen from the results seem to be exerting strong and significant influence on online banking adopters especially in the context of delivering the proposed benefits of the strategy that is adopted by banks in this case or other firms.

### Implications and Recommendations for Future Research

This study provides extra insight into the nature of strategy from a more specialised perspective in the context of e-commerce or e-business. The opportunity for service providers to meet and implement strategy might increase the number of online banking users in Malaysia given the fact that Internet penetration is so high. The moderating effect of E-strategy may also be considered when seeking to identify its influence in online banking adoption. The dimensions of e-strategy as proposed here may be used as effective measures as they have high reliability values. However, before such a study can be done the sample size must be physically expanded to see if the above argument as regards to the dimensions used in this study holds true.

### References

- Adapa, S. (2011). Continued and frequent use of Internet banking by Australian consumers: Identification of the factor components. *Journal of Internet Banking and Commerce*, 16(2), 1-22.
- Aladwani, A. (2001). Online banking: A field study of drivers, development challenges, and expectations. *International Journal of Information Management*, 21, 213–225.
- Amin, H. (2007). An empirical investigation on consumer acceptance of internet banking in an Islamic bank. *Labuan Bulletin of International Business & Finance*, 5(5), 41-65.
- Baltzan, P. & Phillips, A. (2014). *Business driven information systems*. (4<sup>th</sup> ed.) New York: McGraw Hill.
- Borneo Post Online (2014, September, 14). Malaysia's broadband penetration rate stands at 67.1 per cent-Najib. [Press Release]. Retrieved from <http://www.theborneopost.com/2014/09/15/malaysias-broadband-penetration-rate-stands-at-67-1-per-cent-najib/>
- Bourdeau, L., Jean-Charles, C., & Christian, C. (2002). Internet consumer value of University students: E-mail-vs.-web users. *Journal of Retailing and Consumer*, 9(2), 61-69.
- Burton-Jones, A., & Hubona, G. S. (2006). The mediation of external variables in the technology acceptance model. *Journal of Information and Management*, 43(6), 706-717. doi:10.1016/j.im.2006.03.007
- Casey, W., & Peck, W. (2004). A balanced view of balanced scorecard. Executive Leadership Group, White Paper: The Leadership Lighthouse Series.
- Cunningham, M. J. (2002). *E-strategy*. Oxford, England: Capstone Publishing.

- Davis, F. D., Bagozzi, R. P., and Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35(8), 982–1002.
- Ezzi, S. W. (2014). A theoretical model for Internet banking: Beyond perceived usefulness and ease of use, *Archives of Business Research*, 2(2), 31-46.
- Fichman, G., & Kemerer, C. F. (1997). The assimilation of software process innovations: An organisational learning perspective. *Management Science*, 43(10), 1345–1363.
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behaviour: An introduction to theory and research*. Reading, MA: Addison-Wesley.
- Gallarza, M. G., & Saura, I.G. (2006). Value dimensions, perceived value, satisfaction and loyalty: An investigation of University students travel behaviour. *Tourism Management*, 27(6), 437-452.
- Garrigós-Simón, F. J., & Marqués, D. P. (2004) Competitive strategies and firm performance. *Journal of the Iberoamerican Academy of Management*. 2(3). 251–269.
- Gerrard, P., & Cunningham, B. J. (2003). The diffusion of Internet banking among Singapore consumers. *International Journal of Banking Marketing*, 21(1), 16-28.
- Haag, S., & Cummings, M. (2014). *Management information systems for the information age*. (9<sup>th</sup> ed.). New York: McGraw Hill.
- Holbrook, M.B. (1999). *Consumer value: A framework for analysis and research*. London: Routledge.
- Holbrook, M. B. (2006). Consumption experience, customer value, and subjective personal introspection: An illustrative photographic essay. *Journal of Business Research*, 59 (6), 714-725.
- Hong, Y. H., Teh, B. T., Vinayan, G., Soh, C. H., Khan, N., & Ong, T. S. (2013). Investigating the Factors Influence Adoption of Internet Banking in Malaysia: Adopters Perspective. *International Journal of Business and Management*, 8(19), 24-31. doi:10.5539/ijbm.v8n19p24
- Hosein, N. Z. (2009). Internet banking: An empirical study of adoption rates among Midwest community banks. *Journal of Business & Economics Research*, 7(11), 51-72.
- Igbaria, M., & Tan, M. (2007). The consequences of information technology acceptance on subsequent individual performance. *Information and Management*. 32(3), 113–121.
- Johnston, D. A. & Linton, J. D. (2000). Social networks and the implementation of environmental technology. *IEEE transactions of Engineering Management*, 47(4), 465–477.
- Kalkan, A., Erdilb, O., & Çetinkayac, O. (2011). The relationships between firm size, prospector strategy, architecture of information technology and firm performance, 7th International Strategic Management Conference, *Proceedings of the Social and Behavioural Sciences* 24, 854–869.
- Kaplan, R.S. (2010) *Conceptual Foundations of the Balanced Scorecard* Harvard Business School Working Paper, 10-074.
- Kaplan, R., & Norton, D. (2001). *The strategy-focused organization*. Boston, MA: Harvard Business School Press.
- Kaplan, R., & Norton, D. (1996). *The balanced scorecard*. Boston, MA: Harvard Business School Press.
- Kroenke, D. (2014). *Using MIS* (7<sup>th</sup> ed.). New York: Pearson Publishing.
- Lai, V. S., & Li, H. (2005). Technology acceptance model for Internet banking: An invariance analysis. *Journal of Information and Management*, 42(2), 373–386.

- Laudon, K. C. & Laudon, J. P. (2014). *Management information systems* (14<sup>th</sup> ed.). New York: Pearson Publishing.
- Legris, P., Ingham, J., & Collette, P. (2003). Why do people use information technology? A critical review of the technology acceptance model. *Information & Management*, 40(3), 191–204.
- Leidner, D. E., Lo, J., & Preston, D. (2011). An empirical investigation of the relationship of IS strategy with firm performance. *Journal of Strategic Information Systems*, 20(4), 419–437. doi:10.1016/j.jsis.2011.09.001.
- Lim, J-H., Stratopoulos, T. C., & Wirjanto, T. S. (2012). Role of IT executives in the firm's ability to achieve competitive advantage through IT capability. *International Journal of Accounting Information Systems*, 13(1), 21–40.
- Lucas, H. C., & Spitzer, V. K. (1999). Technology Use and Performance: A Field Study of Broker Workstations. *Decision Sciences*, 30(2), 291–311.  
[http://www.bnm.gov.my/?ch=ps&pg=ps\\_regulatees](http://www.bnm.gov.my/?ch=ps&pg=ps_regulatees)
- Malaysian Communications and Multimedia Commission (2005, August 5). Household Use of the Internet Survey 2005. Retrieved from [http://www.skmm.gov.my/skmmgovmy/files/attachments/Household\\_use\\_internet\\_survey\\_2005.pdf](http://www.skmm.gov.my/skmmgovmy/files/attachments/Household_use_internet_survey_2005.pdf)
- Mangin, J-P, L. (2011). Modelling perceived usefulness on adopting on line banking through the tam model in a Canadian banking environment. *Journal of Internet Banking and Commerce*, 16(1), 2-23.
- Miller, K. (2005). *Communications theories: Perspectives, processes, and contexts*. New York: McGraw-Hill.
- Mindshare (2013). Are you digitally normal: Digital culture and the digital normal index. [https://www.mindshareworld.com/sites/default/files/1.AreYouDigitallyNormal-DigitalCultureandtheDigitalNormalIndex\\_FINAL.pdf](https://www.mindshareworld.com/sites/default/files/1.AreYouDigitallyNormal-DigitalCultureandtheDigitalNormalIndex_FINAL.pdf)
- Ortega, E, J, M., & González, R, M, V. (2011). Explaining physicians' acceptance of EHCR systems: An extension of TAM with trust and risk factors. *Computers in Human Behaviour*, 27(1), 319–332.
- Oliver, R. L. (1997). *Satisfaction: A behavioral perspective on the consumer*. New York: McGraw-Hill.
- Ortega, M. J. R. (2010). Competitive strategies and firm performance: Technological capabilities' moderating roles. *Journal of Business Research*, 63(12), 1273–1281.
- Öztürk, E., & Coskun, A. (2014). A strategic approach to performance management in banks: The balanced scorecard. *Accounting and Finance Research*, 3(3), 151-158. doi:10.5430/afr.v3n3p151.
- Robert, M., & Racine, B. (2001). *E-strategy*. New York: McGraw-Hill.
- Rogers, E. M. (1995). *Diffusion of Innovation* (4th ed.). New York: The Free Press.
- Pallant, J. (2010). *SPSS survival manual: A step by step guide to data analysis using SPSS* (4<sup>th</sup> ed.). Maidenhead: Open University Press/McGraw-Hill.
- Parnell, J, A. (2010). Strategic clarity, business strategy and performance. *Journal of Strategy and Management*, 3(1), 304-324.
- Sánchez-Fernández, R, M., Ángeles, I-B., & Holbrook, M.B. (2009). The conceptualization and measurement of consumer value in services. *International Journal of Market Research*, 51(1), 93-113.
- Sauer, C., Southon, G., & Dampney, C. N. G. (1997). Fit, Failure, and the House of Horrors: Toward a Configurational Theory of IS Project Failure. In Proceedings of the Eighteenth International Conference on Information Systems (ICIS), Georgia, United States. 349–366.

- Sekaran, U. (2002). *Research Methods for Business: A Skill Building Approach* (4<sup>th</sup> ed.). New York: Wiley.
- Sheppard, B. H., Hartwick, J., & Warshaw, P. R. (1988). The theory of reasoned action: A meta-analysis of past research with recommendations for modifications and future research. *The Journal of Consumer Research*, 15(3), 325-343.
- Shih, H-P. (2004) Extended technology acceptance model of Internet utilization behaviour. *International Journal of Information and Management*, 4(3), 719–729.
- Slater, S. F., Olson, E. M., & Hult, T. M. (2006). The moderating influence of strategic orientation on the strategy formation capability-performance relationship. *Strategic Management Journal*, 27(12), 1221-1231.
- Suki, M, N. (2010). An empirical study of factors affecting the Internet banking adoption among Malaysian consumers. *Journal of Internet Banking and Commerce*, 15 (2), 1-11.
- Svee, E-O., Giannoulis, C., & Zdravkovic, J. (2011). Modelling business strategy: A consumer value perspective . 4th IFIP WG8.1 working conference on the The Practice of Enterprise Modeling (PoEM2011). 67-81. 4th IFIP WG 8.1 Working Conference, PoEM 2011 Oslo, Norway, 2-3, November, 2011 Proceedings.
- Szajna, B., & Scamell, R. W. (1993). The effects of information system user expectations on their performance and perceptions. *MIS Quarterly*, 17(4), 493–516.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics*. Boston: Pearson/Allyn & Bacon.
- Tan, F. B., & Sutherland, P. (2004). Online consumer trust: A multi-dimensional model. *Journal of Electronic Commerce in Organizations*, 2(3), 40-58.
- Tan, P, J, B., Potamites, P, R., & Wens-Chi, L. (2012). Applying the TAM to understand the factors affecting use of online banking in the Pescadores (Taiwan). *ARNP Journal of Science and Technology*. 2(11), 1022-1028.
- Turban, E., & King, D. (2012). *E-commerce: Managerial and social networks perspectives*, (7<sup>th</sup> ed.) New Jersey: Pearson Publishing.
- Times, T. S. (2011, September 9). *Malaysians reluctant to bank online* [Press Release] Retrieved from <http://www.straitstimes.com>
- Umble, E. J., Haft, R. R., & Umble, M. M. (2003). Enterprise resource planning: Implementation procedures and critical success factors. *European Journal of Operational Research*, 146(2), 241–257.
- Venkatesh, V. & Davis, F. D. (1996). A model of the antecedents of perceived ease of use: Development and test. *Decision Sciences*, 27(3), 451–481.
- Venkatesh, V., & Davis F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2), 186-204. doi:10.1287/mnsc.46.2.186.11926
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425-478.
- Wu, J., & Olk, P. (2014). Technological advantage, alliances with customers, local knowledge and competitor identification. *Journal of Business Research*, 67(10), 2106–2114.